

WHAT IS CLAIMED IS:

1. A display device, comprising:
a pixels array including a plurality of pixels arranged in a form of a matrix;
a data driver for supplying a tone voltage corresponding to display data to the pixels; and
a scan driver for supplying a gate signal to the pixels to select therefrom pixels to which the tone voltage is to be supplied, wherein:

the scan driver selects first n rows ($n > 2$) of pixels, sequentially selects m rows ($m < n$) of second n rows of pixels, and selects pixels from the second n rows of pixels a plurality of times for each row during one frame period; and

the data driver supplies a tone voltage corresponding to black data to the first n rows of pixels and sequentially supplies the tone voltage corresponding to the display data to the second n rows of pixels.

2. A display device according to claim 1, wherein:

the scan driver selects first four rows of pixels at a time, sequentially selects pixels from second four rows of pixels for each row, and selects pixels from the second four rows of pixels twice for each row; and

the data driver supplies the tone voltage corresponding to the black data to the first row of

pixels at a time and sequentially supplies the tone voltage corresponding to the display data to the second four rows of pixels.

3. A display device according to claim 1, wherein when the gate signal to be supplied from the scan driver to pixels of a preceding row falls, the gate signal to be supplied from the scan driver to pixels of a succeeding row rises.

4. A display device, comprising:

a pixels array including a plurality of pixels arranged in a form of a matrix;

a data driver for supplying a tone voltage corresponding to display data to the pixels;

a scan driver for selecting pixels of at least one row to which the tone voltage is to be supplied; and

a control circuit for controlling the data driver and the scan driver, wherein:

the control circuit outputs a first clock signal and the display data to the data driver;

the control circuit outputs to the scan driver a second clock signal, the second clock signal not being created every n signal creation thereof and outputs a scanning start signal generated a plurality of times during one frame period; and

the control circuit outputs to the data driver blanking data other than the display data in place of the display data at timing at which the second

clock signal is not created.

5. A display device according to claim 4,
further comprising:

a first memory to keeping the display data
therein; and

a second memory for keeping the blanking data
therein, wherein:

the control circuit reads the display data
from the first memory at timing synchronized with the
first clock signal, outputs the display data to the
data driver, reads the blanking data from the second
memory at timing which is synchronized with the first
clock signal and at which the second clock signal is
not created, and outputs the blanking data to the data
driver.

6. A display device according to claim 4,
wherein a period of the first clock signal and a period
of the second clock signal are synchronized with a
scanning period for the scan driver to select pixels of
at least one of the rows of pixels.

7. A display device according to claim 4,
wherein:

the scan driver sequentially selects one row
of pixels in response to the second clock signal and
selects the pixels twice for each row at a period of
one frame in response to the scanning start signal;

the scan driver selects n rows of pixels at
timing at which the second clock signal is not created;

the data driver supplies the tone voltage corresponding to the display data to the pixels of one row in response to the first clock signal; and

the data driver supplies the tone voltage corresponding to the blanking data to the pixels of n rows.

8. A display device according to claim 4, wherein the control circuit outputs to the scan driver a first scanning enable signal to invalidate selection of the pixels by the scan driver at timing at which the second clock signal is not created and a second scanning enable signal to validate selection of the pixels by the scan driver at timing at which the second clock signal is not created.

9. A display device, comprising:

a pixels array including a plurality of pixels arranged in a form of a matrix;

a data driver for supplying a tone voltage corresponding to display data to the pixels;

a scan driver for selecting pixels of at least one row to which the tone voltage is to be supplied; and

a control circuit for controlling the data driver and the scan driver, wherein:

the control circuit outputs a first clock signal and the display data to the data driver;

the control circuit outputs to the scan driver a second clock signal, the second clock signal

not being created every n signal creation thereof, a first scanning enable signal to invalidate selection of the pixels by the scan driver at timing at which the second clock signal is not created, and a second scanning enable signal to validate selection of the pixels by the scan driver at timing at which the second clock signal is not created; and

the control circuit outputs to the data driver predetermined data other than the display data in place of the display data at timing at which the second clock signal is not created.

10. A display device according to claim 9, wherein the control circuit outputs to the scan driver a signal once at a period of one frame, the signal having time width of a period of time from a first point of timing at which the second clock signal is not created to a second next point of timing at which the second clock signal is not created.

11. A display device, comprising:

a pixels array including a plurality of pixels arranged in a form of a matrix;

a data driver for supplying a tone voltage corresponding to display data to the pixels;

a scan driver for selecting pixels of at least one row to which the tone voltage is to be supplied; and

a control circuit for controlling the data driver and the scan driver, wherein:

the control circuit outputs a first clock signal and the display data to the data driver;

the control circuit outputs to the scan driver a second clock signal, the second clock signal not being created every n signal creation thereof and outputs a scanning start signal generated a plurality of times during one frame period; and

the control circuit outputs to the data driver blanking data other than the display data in place of the display data at timing at which the second clock signal is created immediately before the timing at which the second clock signal is not created.

12. A display device according to claim 11, wherein:

the scan driver selects the pixels of one row in response to the second clock signal and the scanning start signal during a period of time from a horizontal scanning period starting at timing at which the second clock signal is created immediately before the timing at which the second clock signal is not created to a horizontal scanning period starting at timing at which the second clock signal is not created; and

the scan driver selects the pixels of n rows during one horizontal scanning period at which the second clock signal is created immediately before the timing at which the second clock signal is not created.

13. A display device according to claim 12, wherein:

the data driver supplies to the pixels the tone signal corresponding to the display data in response to the first clock signal during a horizontal scanning period starting at timing at which the second clock signal is created immediately before the timing at which the second clock signal is not created; and

the data driver supplies to the pixels the tone signal corresponding to the blanking data during a horizontal scanning period starting at timing at which the second clock signal is not created.

14. A display device, comprising:

a pixels array including a plurality of pixels arranged in a form of a matrix;

a data driver for supplying a tone voltage corresponding to display data to the pixels;

a scan driver for selecting pixels of at least one row to which the tone voltage is to be supplied; and

a control circuit for controlling the data driver and the scan driver, wherein:

the control circuit outputs a first clock signal and the display data to the data driver;

the control circuit outputs to the scan driver a second clock signal synchronized with the first clock signal and a scanning start signal generated a plurality of times during one frame period; and

the control circuit outputs to the data

driver blanking data other than the display data in place of the display data during a second half of a period the second clock signal.

15. A display device according to claim 14, wherein the period of the first and second clock signals is two horizontal scanning periods.

16. A display device according to claim 15, wherein:

the scan driver sequentially selects the pixels of one row in response to the second clock signal during a first half of the period of the second clock signal and selects the pixels twice for each row at a period of one frame in response to the scanning start signal; and

the scan driver sequentially selects the pixel of one row in response to the second clock signal during a second half of the period of the second clock signal.

17. A display device, comprising:

a pixels array including a plurality of pixels arranged in a form of a matrix;

a data driver for supplying a tone voltage corresponding to display data to the pixels;

a scan driver for supplying a gate signal to the pixels to select therefrom pixels to which the tone voltage is to be supplied, wherein:

the scan driver selects the pixels of n rows a plurality of times for each row during one frame

period.

18. A display device, comprising:

a pixels array including a plurality of pixels arranged in a form of a matrix;

a data driver for supplying a tone voltage corresponding to display data to the pixels;

a scan driver for supplying a gate signal to the pixels to select therefrom pixels to which the tone voltage is to be supplied, wherein:

the scan driver selects the pixels a plurality of times for each row during one frame period; and

the data driver supplies to the pixels a tone voltage corresponding to black data in place of the display data at a predetermined interval of time.

19. A display device, comprising:

a pixels array including a two-dimensional pixels including a plurality of pixels arranged in rows in a first direction and in columns in a second direction vertical to the first direction;

a plurality of scanning signal lines for supplying a scanning signal to each group of pixels juxtaposed in the second direction;

a plurality of data signal lines for supplying a data signal including a tone signal of display data to each group of pixels juxtaposed in the first direction;

a scan driver for outputting the scanning

signal to each of the scanning signal lines;

a data driver for outputting the data signal to each of the data signal lines; and

a control circuit for transmitting a first clock signal for the scanning driver to start scanning of the scanning signal lines and for transmitting a second clock signal controlling the display data transmitted to the data driver, wherein:

the control circuit outputs the scanning signal from the scanning driver twice to selected lines selected from the lines of the pixels array, the number of the selected lines being less than that of the lines of the pixels array;

the control circuit outputs the scanning signal from the scanning driver three times during one frame period; and

the control circuit outputs the display data and data indicating a black tone to the data driver during one frame period.

20. A method of driving a liquid crystal display device having a hold-type luminance response characteristic, comprising the steps of:

changing the hold-type luminance response characteristic into an impulse-type luminance response characteristic by masking video data outputted to a pixels array of the display device using blanking data once per n lines of the pixels array; and

outputting twice during one frame period a

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gate signal to a gate line corresponding to each pixel row of the pixels array.